TSG-RAN Meeting #6
Nice, France, 13 – 15 December 1999

TSGRP#6(99)765

Title: **Agreed CRs of category "D" (Editorial) to TS 25.435**

Source: **TSG-RAN WG3**

Agenda item: **5.4.3**

Doc #	Status-	Spec	CR	Rev	Subject	Cat	Versio	Versio
R3-99i18	agreed	25.435	001		Editorial CR to 25.435	D	3.0.0	3.1.0
R3-99k10	agreed	25.435	006		Clarification of the use of the DL	D	3.0.0	3.1.0
R3-99h90	agreed	25.435	007		Editorial CR to 25.435	D	3.0.0	3.1.0

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***Document* R3-99K10**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.435	CR	006	Current Version:	3.0.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG RAN #6	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*

(U)SIM		ME		UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG3 **Date:** Dec ,1999

Subject: Clarification of the use of the DL Transport Channels Synchronisation procedure. (previous I01)

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification	X		Release 99	X
				Release 00	

Reason for change: Clarification the chapter 5.3 DL Transport Channels Synchronisation. The procedure shall not be applied for the transport bearers where there is only UL traffic channels. No reception window is specified for these channels.

Clauses affected:

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

5.3 DL Transport Channels Synchronisation

CRNC sends a DL SYNCHRONISATION Control Frame to node B. This message indicates the target CFN.

Upon reception of the DL SYNCHRONISATION Control Frame Node B shall immediately respond with UL SYNCHRONISATION Control Frame indicating the ToA for the DL Synchronisation frame and the CFN indicated in the received message.

The procedure shall not be applied on transport bearers transporting UL traffic channels RACH or USCH.

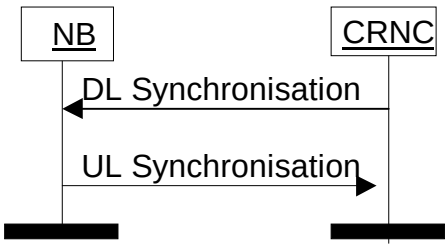

Figure 1: DL Transport Channels Synchronisation procedure

3GPP TSG-RAN Meeting #6 *Document* ***R3-99H90***

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3G CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.435 **CR** **007** Current Version: 3.0.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG-RAN#6 for approval [X] (only one box should be marked with an X)
list TSG meeting no. here ↑ for information [ ]

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

Proposed change affects: USIM [ ] ME [ ] UTRAN [X] Core Network [ ]
(at least one should be marked with an X)

Source: TSG-RAN WG3 **Date:** 6-10 DEC 1999

Subject: Editorial changes to 25.435

3G Work item:

Category:
(only one category shall be marked with an X)

F	Correction	
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	X

Reason for change:

Editorial changes to 25.435:

1. CRC-> CRNC
2. Optionality in L1 of pilot bits on s-CCPCH
3. Clarify that the offset is a negative offset related to the maximum power level
4. Corrections for PCH controls frames (12 bit CFN/20 bit TOA)
5. Alignment control frame nomenclature of 25.435 to 25.427
6. Length of Control Frame Type

CR is equivalent to the R3#8(99)E05 (with remarks) and R3#(99)F98, accepted during SWG in R3#8.

Clauses affected: Sections 5.1.2.; 6.2.6.10; 6.3.1; 6.3.2;6.3.3.

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

USCH Uplink Shared Channel

For other abbreviations, please refer to [2].

4 General aspects

4.1 Common Transport Channel Data Stream User Plane Protocol Services

Common transport channel provides the following services:

- Transport of TBS between the Node B and the CRNC for common transport channels
- Support of transport channel synchronisation mechanism
- Support of Node Synchronisation mechanism

4.2 Services expected from data transport

The following services are expected from the transport layer:

- In sequence delivery of Frame Protocol PDUs.

5 Data Streams User Plane Procedures

5.1 Data Transfer

5.1.1 RACH Channels

Data Transfer procedure is used to transfer data received from Uu interface from NodeB to CRNC. Data Transfer procedure consists of a transmission of Data Frame from Node B to CRNC.

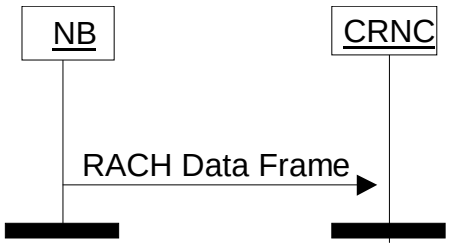

Figure 1: RACH Data Transfer Procedure

5.1.2 [FDD — Secondary-CCPCH]/[TDD — CCPCH] related transport Channels

For the FACH transport channel, a Data Transfer procedure is used to transfer data from CRNC to node B. Data Transfer Procedure Consists of a transmission of Data Frame from CRNC to node B.

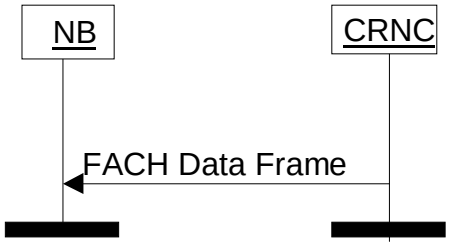

Figure 2: FACH Data Transfer Procedure

For the PCH transport channel, a Data Transfer procedure is used to transfer data from CRNC to node B. Data Transfer Procedure Consists of a transmission of Data Frame from CRNC to node B.

Figure 3: PCH Data Transfer Procedure

In this case the PCH Data Frame may also transport information related to the PICH channel.

If the Node B does not receive a valid FP frame in a TTI, it assumes that there is no data to be transmitted in that TTI for this transport channel.

If the node B is aware of a TFI value corresponding to zero bits for this transport channel, this TFI is assumed. When combining the TFI's of the different transport channels, a valid TFCI might result and in this case data shall be transmitted on the Uu.

If the node B is not aware of a TFI value corresponding to zero bits for this transport channel or if combining the TFI corresponding to zero bits with other TFI's results in an unknown TFI combination, the handling as described in the following paragraph shall be applied.

At each frame, the Node B shall build the TFCI value of each [FDD — secondary-CCPCH]/[TDD — CCPCH] according to the TFIs of the transport channels multiplexed on this [FDD — secondary-CCPCH]/[TDD — CCPCH] and scheduled for that frame. [FDD — In case the Node B receives an unknown TFI combination, it shall only transmit the pilot bits of the secondary-CCPCH (if configured) without TFCI bits or Data bits.] [TDD — In case the Node B receives an unknown TFI combination, it shall only transmit data obtained by rate matching.]

If the Node B does not receive a valid FP frame in a TTI or a frame without paging indication information, it assumes that no UE's have to be paged on the Uu in this TTI. In this case the default PICH bit pattern of all zeros shall be transmitted.

Data Frames sent on Iub for different transport channels multiplexed on one [FDD — secondary-CCPCH]/[TDD — CCPCH] might indicate different transmission power levels to be used in a certain Uu frame. Node-B shall determine the highest DL power level required for any of the transport channels multiplexed in a certain Uu frame and use this power level as the desired output level.

6.2.6.7 Transport Block

Description: A block of data to be transmitted or have been received over the radio interface. The transport format indicated by the TFI describes the transport block length and transport block set size. See [3]

6.2.6.8 CRC indicator

Description: Shows if the transport block has a correct CRC. The UL Outer Loop Power Control may use the CRC indication.

Value range: {0=Correct, 1=Not Correct}

Field length: 1 bit

6.2.6.9 Payload CRC

Description: Cyclic Redundancy Polynomial calculated on the payload of a data frame with polynom X^16+X^15+X^2+1.

The CRC calculation shall cover all bits in the data frame payload, starting from bit 7 in the first byte up to bit 0 in the byte before the payload CRC.

Field length: 16 bits

6.2.6.10 Transmit power level

Description: Preferred transmission power level during this TTI for the corresponding transport channel. The indicated value is the negative offset relative to the maximum power configured for the [FDD — secondary CCPCH]/[TDD — CCPCH]

Value range: {0 -.. 25.45 dB}

Granularity: 0.1 dB

Field length: 8 bits

6.2.6.11 Paging Indication (PI)

Description: Describes if the PI Bitmap is present in the payload

Value range: {0=no PI-bitmap in payload, 1=PI-bitmap in payload}

Field length: 1 bit

6.2.6.12 Paging Indication bitmap (PI-bitmap)

Description: Bitmap of Paging Indications. The order of the PI's in the bitmap corresponds to the order of the PI's on the Uu: bit 7 of the first byte contains PI0.

Value range: {18, 36, 72 or 144 Paging Indications}

Field length: 3, 4, 9 or 18 bytes (the PI-bitmap field is padded at the end up to an octet boundary)

6.3 Control frame structure

6.3.1 Introduction

The Common Control Channel control frames are used to transport control information between the CRNC and the Node B. The figure below defines the Control Frame structure for common transport channels.

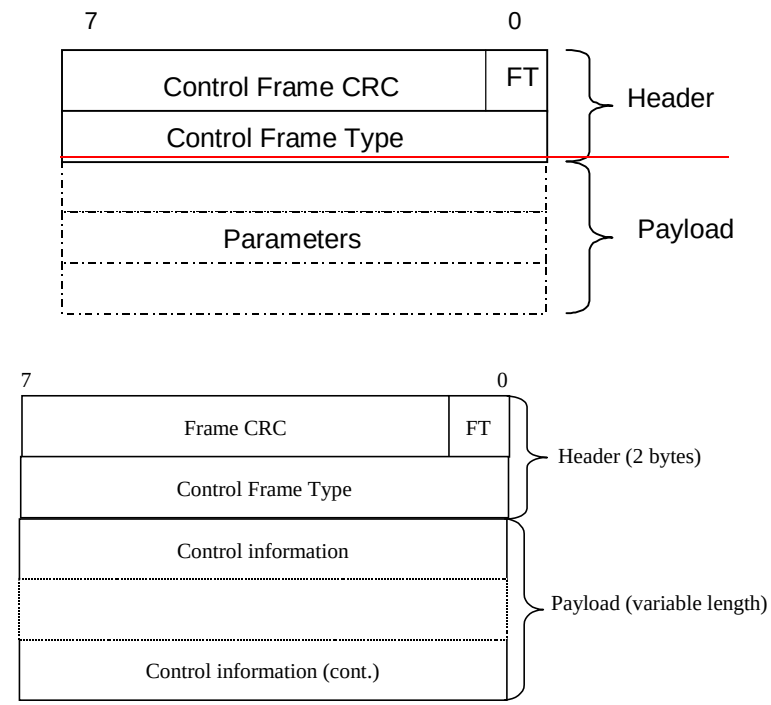

Figure 4: Iub Common Transport Channel Control Frame Format

The structure of the header and the payload of the control frames is defined in the following sections:

6.3.2 Coding of information elements of the Control frame header

6.3.2.1 ~~Control f~~Frame CRC

Description: Cyclic Redundancy Polynomial calculated on a control frame with polynom:
X^7+X^6+X^2+1.

The CRC calculation shall cover all bits in the control frame, starting from bit 0 in the first byte (FT field) up to the end of the control frame.

Value range: {0-127}

Field length: 7 bits

6.3.2.2 Frame type (FT)

Refer to section 6.2.6.2.

6.3.2.3 Control Frame Type

Description: Indicates the type of the control information (information elements and length) contained in the payload.

Value values of the Control Frame Type parameter are defined in the following table:

Type of control frame	Value
Timing adjustment	0000 0010
DL synchronisation	0000 0011
UL synchronisation	0000 0100
DL Node synchronisation	0000 0110
UL Node synchronisation	0000 0111

Field Length: 8 bits

6.3.3 Payload structure and information elements

6.3.3.1 Timing Adjustment

6.3.3.1.1 Payload Structure

Table below shows the structure of the payload when control frame is used for the timing adjustment.

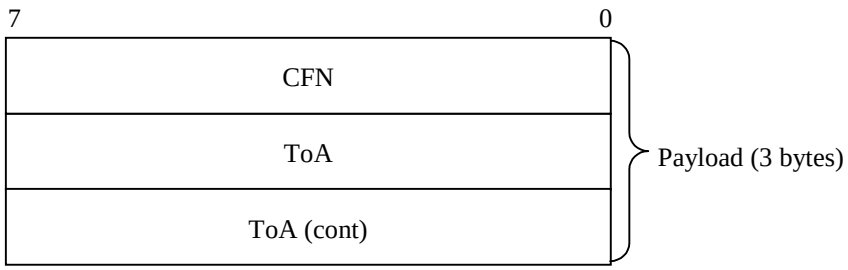

Figure x: Timing adjustment payload structure (non-PCH transport bearers)

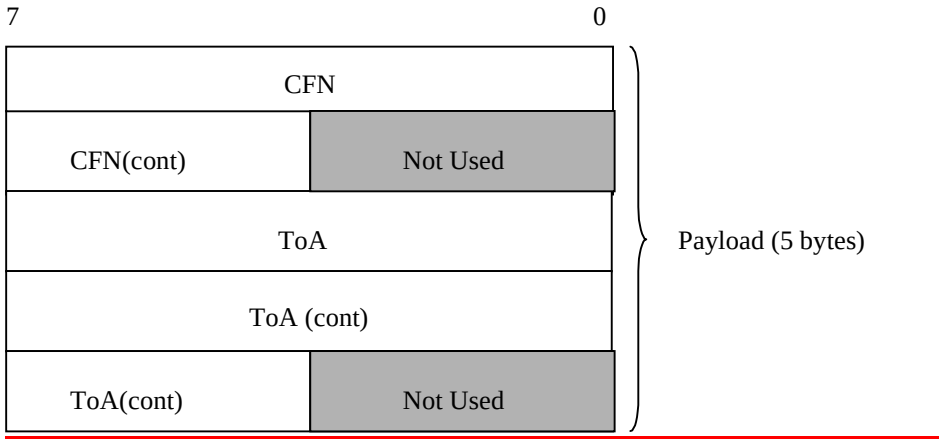

Figure y: Timing adjustment payload structure (PCH transport bearer)

6.3.3.1.2 CFN

Refer to section 6.2.6.3.

6.3.3.1.3 Time of arrival (ToA)

Description: Time difference between the arrival of the DL frame with respect to TOAWE (based on the CFN in the frame). The value range and field length depend on the transport channel for which the CFN is used.

Value range (PCH): { -20480ms, +2047~~0~~9.875ms}

Value range (other): {-1280ms, +127~~0~~9.875ms}

Granularity: 125~~m~~µs

Field length (PCH): 20 bits

Field length (other): ~~coding is~~ 16 bits

6.3.3.2 DL synchronisation

6.3.3.2.1 Payload Structure

Table below shows the structure of the payload when control frame is used for the user plane synchronisation.

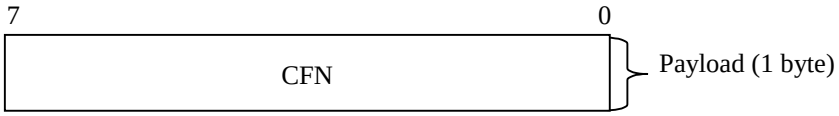

Figure x: DL Synchronisation payload structure (non-PCH transport bearers)

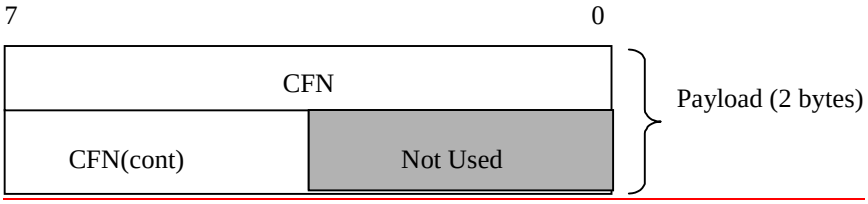

Figure x: DL Synchronisation payload structure (PCH transport bearers)

6.3.3.2.2 CFN

Refer to section 6.2.6.3.

6.3.3.3 UL Synchronisation

6.3.3.3.1 Payload Structure

Table below shows the structure of the payload when the control frame is used for the user plane synchronisation (UL).

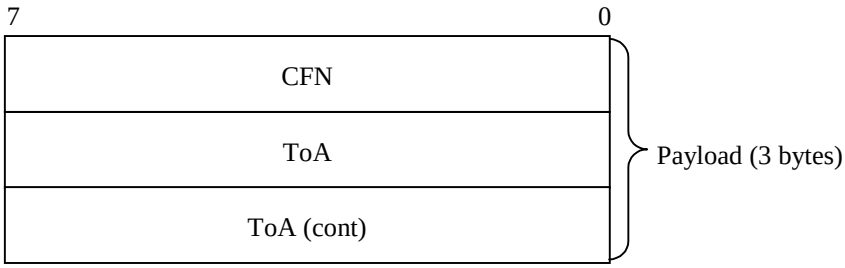

Figure x: UL Synchronisation payload structure (non-PCH transport bearers)

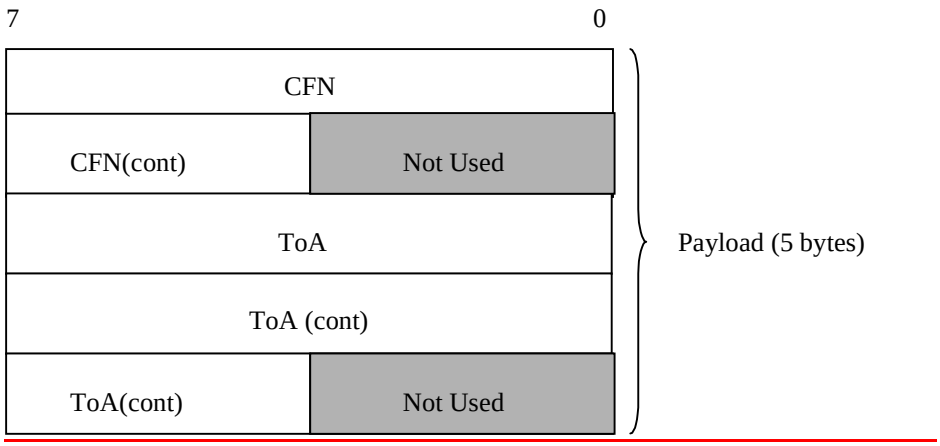

Figure x: UL Synchronisation payload structure (PCH transport bearers)

6.3.3.3.2 CFN

Refer to section 6.2.6.3.

6.3.3.3.3 Time of Arrival (TOA)

Refer to section 6.3.3.1.3.